

ABSTRACT OF THE INVENTION

The present invention provides a gel fuel, which includes a fuel substance held in a polymeric structure. One embodiment of the composition includes neat methanol, to which a thickening substance, such as that sold commercially under the trade name Carbopol®, is added to impart viscosity, as well as stabilizing and suspending properties. In addition to the thickening substance, a further substance can be added to balance the pH of the gel fuel when needed. In accordance with the invention, a fuel cell cartridge is provided that has at least one aspect that is methanol-permeable, and which may include a fuel vapor permeable layer and it may be comprised of one of a number of various alternative materials. Features within the fuel cartridge can be used to increase surface area of the gel fuel, and to maintain the gel fuel in a desired location within the cartridge.